

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. - 26. (canceled).

27. (currently amended): A sensor comprising a first organic substrate having a microfluidic channel and an electronic sensing device located therein, and a second substrate bonded to the first substrate so as to close the microfluidic channel, wherein a conducting part of the electronic sensing device is exposed at the surface of the microfluidic channel, and said conducting part comprises poly(3,4-ethylenedioxythiophene) doped with poly(styrene sulphonate acid) A sensor according to claim 26 wherein the conducting part is PEDOT/PSS.

28. (original): A sensor according to claim 27 for sensing the presence of glucose in the microfluidic channel.

29. (canceled).

30. (currently amended): A sensor method comprising;

defining in a single operation a microfluidic channel and a pair of electrodes of an electronic sensing device, wherein the microfluidic channel and the pair of electrodes are defined in a single operation

receiving a flow of liquid or gas in said microfluidic channel, and

sensing a property of said liquid or gas.

31. (currently amended): A sensor method as claimed in claim 30 wherein the said operation is embossing.

32. (currently amended): A sensor method according to claim 30 wherein the microfluidic channel is located in an organic substrate.

33. (currently amended): A sensor method according to claim 30 wherein current flowing between the electrodes is sensitive to environmental conditions within the channel.

34. (currently amended): A sensor method according to claim 33 wherein the environmental conditions are temperature.

35. (currently amended): A sensor method according to claim 33 [[34]] wherein the environmental conditions are the presence of a species to be sensed.

36. (currently amended): A sensor method as claimed in claim 30, wherein said electrodes form source and drain electrodes of a field-effect transistor.

37. (currently amended): A sensor method as claimed in claim 36 wherein said field-effect transistor is a vertical-channel field-effect transistor.

38. - 41. (canceled).

42. (currently amended): A method ~~for producing a sensor, the method comprising the steps of:~~

forming a body comprising an electrically conductive layer;

[[and]] embossing the body to define in a single operation a microfluidic channel and a pair of electrodes, the pair of electrodes being exposed at the surface of the channel;

receiving a flow of a liquid or gas in said channel; and

sensing a property of said liquid or gas.

43. (currently amended): A method as claimed in claim 42 wherein the defining said pair of electrodes comprises microcutting the electrically conductive layer.

44. (currently amended): A method as claimed in claim 42 further comprising the step of depositing over the body a layer of a semiconductive material.

45. (currently amended): Amended) A method as claimed in claim 44 further comprising ~~the step of~~ depositing over the layer of semiconductive material a layer of an insulating material.

46. (currently amended): A method as claimed in claim 45 further comprising the step of depositing over the layer of insulating material a layer of a conductive material.

47. (canceled).